

Project Report I

Mayer’s theory for Designing Instruction for Constructivist learning is a straightforward and practical model to use in any form of instruction. This model states that learning occurs when the learner “constructs a knowledge representation in working memory.” The learner is required to make sense of the material and the teacher is there to provide guidance. Constructivist learning occurs when the student is able to both retain the presented information and transfer this knowledge in order to solve new problems. Students who are able to engage in problem solving transferring achieve learning by understanding. This process requires the student to use the cognitive processes listed below and is referred to as the SOI model of learning. These include:

1. **Selecting** relevant information to be retained in visual and auditory working memory
2. **Organize** the information into images that “make sense”. This results in the construction of a pictorial and verbal mental model in working memory.
3. **Integrating** the pictorial and verbal mental models and making the connections with existing knowledge in long term memory.

Instructional material should be designed to assist the student in selecting, organizing and integrating the material presented. The chart below summarizes methods to accomplish this task.

Select	Organize	Integrate
Highlight the relevant information using headings, <i>italics</i> , boldface type , bullets, arrows, icons, margin notes, repetition, captions, larger font , and <u>underlining</u> .	Structure of the text: <ul style="list-style-type: none"> • Comparison/contrast • Cause/effect 	Advance organizers or analogies
Instructional objectives and “what if” type questions	Outlines	Illustrations with captions
Summary notes	Headings	Animation with narration
“Less is more” or elimination of excess information	Pointer words (“because of this” “as a result”)	Worked examples
	Graphs	Elaborate questions

Values which support the “construction” of knowledge include (1) focusing on the process of knowledge construction within the learners head, (2) the ability to transfer knowledge in addition to retention and (3) the promotion of “how to” learn as well as what information is to be learned.

The layout of the materials in this theory, as listed in the table above, assist the learner in selecting and organizing the relevant information from the material presented to facilitate storage in long term memory. Focusing on how learners learn and developing instructional materials that enhance this process, are the cornerstones of this theory. Bold type, outlines, pointer, concise not elaborate

information, pictures and captions are just some of the ways to present information to a constructivist learner, like myself. How often do we, first, outline a chapter when trying to learn new information?

Designing Instruction for Constructivist Learning is the theory we feel will best suit the course project. We are designing an instructional module for teachers in the New Hanover County Schools that will assist them in learning how to effectively use their GroupWise e-mail system, to include, but not limited to, opening and saving attachments. Our client has determined that teachers are not receiving or aware of memos and updates that she sends to them via e-mail and a needs assessment determined that many teachers did not know how to properly work the e-mail system. Teachers have enough work to do and our goal is not to add to that workload by creating another detailed task for them to be required to complete nor a long class to attend. Because Mayer's theory emphasizes individual knowledge construction, this self instructional module will allow teachers to work at their own pace and on their own time. The teachers' motivation for completing this project hopefully will be to enhance and simplify their day. Proper e-mail use can assist with organization and an ability to stay current with new information as it comes from the county office.

The primary goal for Mayer's theory is to "foster knowledge construction through direct instruction...primarily for use with textbook-based learning, multimedia environments in which behavioral activity is not possible." The task at hand, learning to use e-mail properly, involves designing instructional material that is clear, concise and easily outlines to the teachers (learners) exactly how to go about completing the task.

The goal is for New Hanover County Teachers, or our learners, to experience a constructivist learning outcome, and experience both retention and transfer of the information presented. The instruction should be designed so they are able to select the relevant information, organize that information into mental representations and integrate those representations with the existing knowledge they have regarding computers and how to use them to enhance and support their job. **(See Learner and Context Analysis, below)**

Needs Analysis

- **Problem Statement:** When administrators and teachers gather to discuss recent events, either by phone or in person, teachers are indicating that they are not aware or never received information that had been sent via GroupWise e-mail. Administration believes that the cause of this problem is due to lack of training in using the GroupWise system.
- **Actual Performance:** The GroupWise system is available to teachers allowing them to perform all email tasks. However, only 60% can perform basic functions within the program. The remaining 40% need further training to send and reply to emails and are unable to view/save attachments, forward, and send emails to groups.
- **Optimal Performance:** New Hanover County teachers will be able to open, send, and receive attachments, forward emails and use the address book to send mass emails to groups.

- **Needs:** Teachers need to be trained to provide optimal skills to perform functions of email. (The skills they need to possess are, working with attachments, forwarding and using the address book.)

- **Possible Solutions include:**
 - Providing a self instructional module to guide teachers through the process of performing the basic functions within the Groupwise system, including working with attachments.

Instructional Goals for the Training Module: (see task analysis chart below)

- Teachers will demonstrate their ability to send an attachment. (Rule)
- Teachers will demonstrate their ability to open, read, and save an attachment using Groupwise. (Rule)

Learner Analysis

Information Categories	Data Sources	Learner Characteristics
Entry Behaviors	Interviews and Observations	Learners have experience working with computers. They are able to turn a computer on and sign in to Novell. Learners have little to no experience working with GroupWise email.
Prior Knowledge of Topic Area	Interviews and Observations	Learner have sent and received emails through other email systems such as “Yahoo” and “Hotmail.” Learners have received training in terms of defining and using the Internet and the World Wide Web.
Attitudes Towards Content	Interviews and Observations	Learners believe that the use of email could greatly improve communication efforts between all New Hanover County School employees. Using email could also improve the communication with the parents/guardians of students. Learners also realize that the use of email to send messages helps alleviate problems due to paper shortage.
Attitudes Toward Potential Delivery System	Interviews	Most learners are thrilled to be using a self instructional module and a computer for instruction. Due to their busy schedules, this delivery system is most practical because the learners (teachers) can complete the module at their own pace and in their own time. In other words, they appreciate all materials but flourish with the SOI model. Though some learners are apprehensive in using the computer, they are still very eager to learn the material.
Motivation for Instruction	Interviews	Learners realize the importance of completing the module. Learners want to be able to implement their new skills as soon as possible to improve

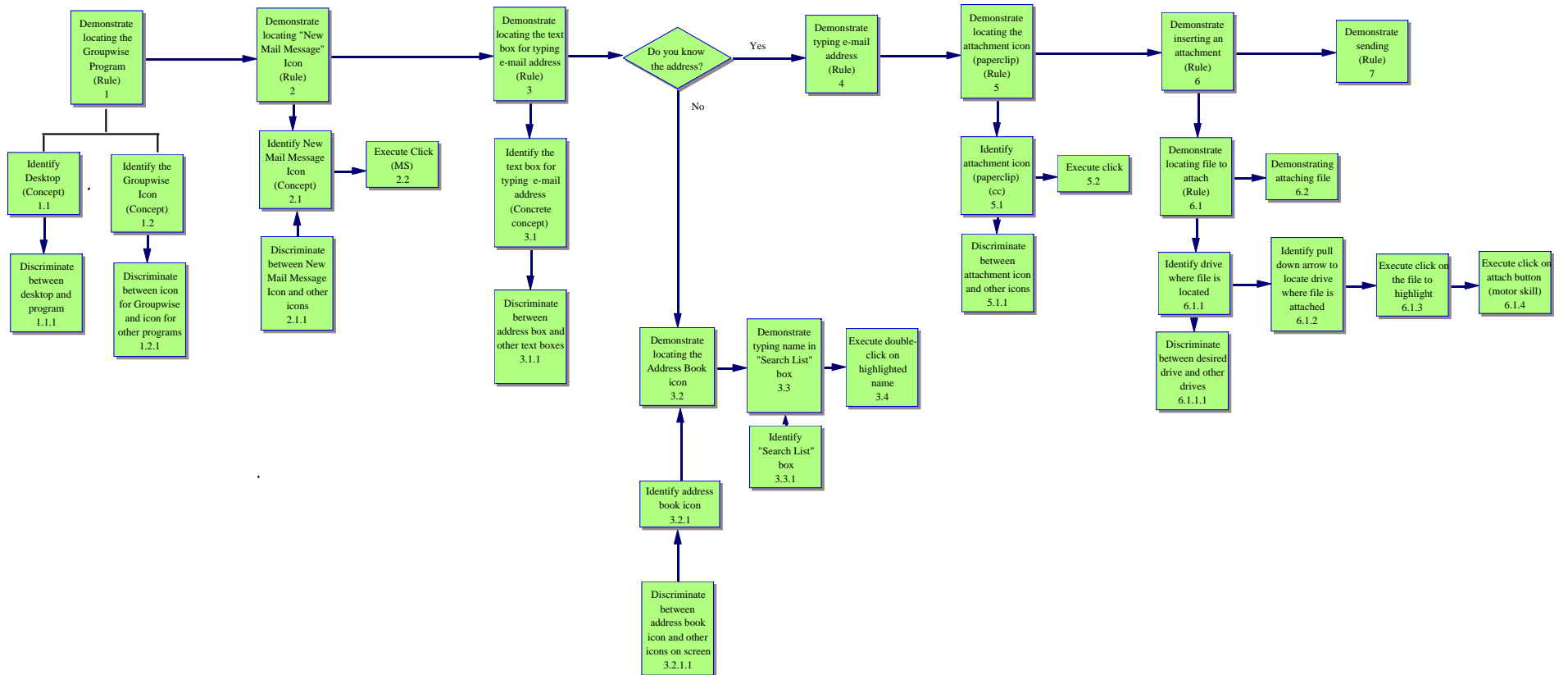
		<p>communication with other school employees. Learners will be confident that they will be able to open, reply, and send emails using GroupWise. They are also confident that they will be able open, send and save attachments. Learners will be attentive to the module.</p>
<p>Education and Ability Level</p>	<p>Interviews and Personnel Records</p>	<p>All learners are educators with at least a bachelor's degree in education. They have all passed Praxis I and II and have completed the computer competencies for their school system.</p>
<p>General Learning Preferences</p>	<p>Interviews and Observations</p>	<p>Learners prefer to learn by actually completing the modules on their own and learn from their mistakes. Also, they prefer less teacher-directed instruction and prefer to work at their own pace.</p>
<p>General Group Characteristics</p>	<p>Interviews and Observations</p>	<p>Learners vary in ages, race, as well as socio economic backgrounds. A variety of focus areas are represented within the learning group. Some learners have attained their Masters and/or Doctoral degrees various educational fields.</p>
<p>Attitudes Toward Training Organization</p>	<p>Interviews</p>	<p>Overall, students are extremely positive towards their school and the personnel within the school. They believe that this training will help them in the future to successfully show their ability to communicate via GroupWise email.</p>

Context Analysis

Information Categories	Data Sources	Performance Site Characteristics
Managerial/Supervisory Support	Interviews and Observations	<p>Supervision from the facilitator of this program is minimal and is mainly provided as support personnel to be contacted by e-mail or phone for questions that arise.</p> <p>Students will be completing this self-instructional module on their own and in their classrooms. Rewards include personal growth, improvement in organizational skills and an increased ability to stay current with information provided by the New Hanover County Office.</p>
Physical Aspects of Site	Observation	<p>Students will be using any computer within the New Hanover School System, but likely one within their daily classroom setting. The GroupWise E-mail Program used by the county is the focus of the instruction and the program is on any network computer..</p>
Social Aspects of Site	Observation	<p>Students will be completing this module independently. However, they are encouraged to share their ideas and questions with other students for further learning and support. Other members of the teaching staff who have more proficient skills regarding GroupWise, are encouraged to serve as support staff.</p>
Relevance of Skills	Observations and Interviews	<p>GroupWise E-mail Program is available on every networked computer with the New Hanover County School System. Students will be able to apply the skills used in this module to their everyday activities and use them to stay current with and organize the information sent from the County office. Future applications may include an interest to further explore the GroupWise Program, learning how to maintain shared folders of information between teachers within a given field (math, science, art).</p>

Terminal Objective #1

Teachers will demonstrate their ability to send an attachment
(Rule)



Terminal Objective #2

